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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/553,356

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Hartmut Sauer

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08/22/2008

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EXAMINER

KERNS, KEVIN P

ART UNIT

PAPER NUMBER

1793

NOTIFICATION DATE

DELIVERY MODE

08/22/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

INFO@ORTPATENT.COM

Office Action Summary	Application No. 10/553,356	Applicant(s) SAUER, HARTMUT	
	Examiner Kevin P. Kerns	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 October 2005 and 03 March 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☒ Claim(s) 12-14, 16 and 18 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>3/3/06</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

1. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

In this instance, the abstract recites essentially the same language as claim 1.

2. The abstract of the disclosure is objected to because steps v, vi, vii, and vii should be replaced with steps i, ii, iii, and iv. Correction is required. See MPEP § 608.01(b).
3. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

Art Unit: 1793

- (a) TITLE OF THE INVENTION.
- (b) CROSS-REFERENCE TO RELATED APPLICATIONS.
- (c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
- (d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
- (e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
- (f) BACKGROUND OF THE INVENTION.
 - (1) Field of the Invention.
 - (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
- (g) BRIEF SUMMARY OF THE INVENTION.
- (h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
- (i) DETAILED DESCRIPTION OF THE INVENTION.
- (j) CLAIM OR CLAIMS (commencing on a separate sheet).
- (k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
- (l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A “Sequence Listing” is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required “Sequence Listing” is not submitted as an electronic document on compact disc).

In this instance, the specification lacks section headings.

Claim Objections

4. Claims 12-14, 16, and 18 are objected to because of the following informalities: in claims 12 and 13, 3rd lines of both claims, replace “aluminium” with “aluminum”, and insert “,” after “titanium”. In claim 14, 2nd line, replace “aluminium” with “aluminum”, and insert “,” after “titanium”. In claim 16, 3rd line, replace “aluminium” with “aluminum”. In claim 18, 3rd and 4th lines, insert “,” after “powder”. Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 1-18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the surface". There is insufficient antecedent basis for this limitation in the claim. In addition, it is unclear which "surface" (of the plurality of surfaces) of the model is being referred to in the claim.

Claim 9 recites the limitation "the granulation P80". There is insufficient antecedent basis for this limitation in the claim. In addition, it is unclear what is meant by "granulation P80".

A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

In the present instance, claim 5 recites the broad recitation “at least 35 HRC”, and the claim also recites “in particular of more than 50 HRC” which is the narrower statement of the range/limitation.

Claim 6 recites the broad recitation “the model consists of plastic”, and the claim also recites “preferably of CRP, polyamide, polymer resin...” which is the narrower statement of the range/limitation.

Claim 7 recites the broad recitation “the model is made of plastic”, and the claim also recites “preferably of stereolithography...” which is the narrower statement of the range/limitation.

Claim 9 recites the broad recitation “a blasting agent”, and the claim also recites “preferably with silicon carbide” which is the narrower statement of the range/limitation.

Claim 11 recites the broad recitation “without electric current”, and the claim also recites “in particular by an electrolytic process” which is the narrower statement of the range/limitation.

Claim 16 recites the broad recitation “backfilled within the frame”, and the claim also recites “in particular by thermal spraying or casting...” which is the narrower statement of the range/limitation.

Claim 18 recites the broad recitation “a spraying powder which preferably consists of 30-50% by weight molybdenum powder, 70-50% by weight steel powder”, and the claim also recites “in particular of 50% by weight molybdenum powder, and 50% by weight steel powder” which is the narrower statement of the range/limitation.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jansson (US 4,231,982) in view of Weiss et al. (US 5,079,974).

Jansson discloses a process for the manufacture of tools for deep drawing, molding (casting), extruding, or the like, in which the method includes providing prototypes starting out from models (working model 10 that comprises plastic, wood, wax, or the like – column 1, lines 50-53), in which the process includes the steps of providing a surface of the working model 10 (not subjected to chemical pretreatment) having a release coating 11, such that the surface of working model 10 is provided with a thermal sprayed metal layer 12 to roughen its surface (“the upper surface of the sprayed layer as seen in the figure thereby becomes somewhat uneven” – column 1, lines 38-40; and Figure 1B); applying an intermediate layer (wearing coating 14 of metal or metal alloy) by spraying; applying a composite material consisting of a non-metallic substrate containing at least one polymer (thermosetting plastic material 15); and removing the model 10 (that includes thermal sprayed metal layer 12 having a thickness of 2-5 mm and would have an HRC value exceeding 35 if alloyed tool steel is used – see abstract) from the intermediate layer (wearing coating 14) upon heating the

Art Unit: 1793

assembled working model that includes thermal sprayed metal layer 12 and wearing coating 14 (heated rather than applied by thermal spraying, CVD, PVD, or laser treatment) upon curing of the plastic material 15, as shown in Figure 3, such that the wearing coating 14 adheres (column 2, lines 61-65) in an outstanding manner to the micro pores, which is interpreted as backfilling of the coating (abstract; column 1, lines 41-68; column 2, lines 1-68; column 3, lines 1-14; and Figures 1-3). Jansson does not disclose that a metallic or ceramic coating is applied onto the intermediate layer by thermal spraying.

However, Weiss et al. disclose a method for forming sprayed metal dies (tooling) via solid free-form fabrication, such as stereolithography (column 2, lines 22-24), in which the method includes applying a first metallic coating by thermal spraying of a first metal 12 after mounting a first frame 20 on a positive pattern 10 to form a first metal substrate 14, then mounting a second frame 24 onto the first metal substrate 14 and spraying a second metal 16 comprised of steel to the proper thickness, in which a backing material 34 of a castable material (ceramic 36) is provided to support the second metal substrate 18 (column 2, lines 5-52), with the thermal spraying of the coating being advantageous for enabling resistance of shrinkage due to residual stress within the second metal substrate (column 2, line 5 through column 4, line 61; and Figures 1A-1E).

It would have been obvious to one of ordinary skill in the art at the time the applicant's invention was made to modify the process for the manufacture of tools for deep drawing, molding (casting), extruding, or the like, as disclosed by Jansson, by

using a metallic coating applied onto the intermediate layer by thermal spraying, as taught by Weiss et al., in order to enable resistance of shrinkage due to residual stress within the second metal substrate (Weiss et al.; abstract; column 1, lines 5-8; and column 2, lines 11-17).

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 5,781,830 and US 6,178,306 (equivalents to references cited in the European search report) are also cited in PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Kevin P. Kerns whose telephone number is (571)272-1178. The examiner can normally be reached on Monday-Friday from 8:00am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jessica Ward can be reached on (571) 272-1223. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1793

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Kevin P. Kerns
Primary Examiner
Art Unit 1793

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Primary Examiner, Art Unit 1793
August 1, 2008